

Form ESA-B4. Public Report for ESA-196-2

FINAL

Introduction:

Headquartered in Green Bay, Wis., Schreiber is a privately held dairy company with sales in excess of \$3 billion. Its products – which include process, natural, cream and specialty cheese and yogurt – are sold primarily through customer brand distribution programs.

The overall site steam system at the Logan, Utah plant was the focus of a 3-day steam Energy Savings Assessment (ESA).

Objective of ESA:

The purpose of the Steam energy saving assessment was to train this facility's engineering and maintenance supervisors to use the Department of Energy steam tools, to create a model of the plant steam system, and to identify projects that will save energy. With a thorough understanding of the steam tools the facility will be able to adjust the site model as improvements are implemented and then predict future opportunities with changing energy prices.

Focus of Assessment:

Overall plant-wide steam system

Approach for ESA:

The Department of Energy Steam System Scoping Tool was reviewed with the plant maintenance team. This and other specific information was used to begin the modeling process. The boiler room was toured and a strategy devised for collecting the needed data.

The 3E Plus software was used to build a metric for the plant distribution system. The Department of Energy definition of World Class steam trap maintenance program was reviewed with the maintenance team.

General Observations of Potential Opportunities:

1. Tune each boiler to optimize the oxygen levels. Boilers 1 and 2 were observed to have flue gas oxygen levels of 4% to 5%. Boiler 3 was observed to have an oxygen level of 8.9%.
2. Use boiler #3 as lead boiler all of the time. If boiler number 3 can be tuned to 5% or better then it should be the lead boiler all of the time unless it is out of service.
3. Add O₂ Trim to boilers 1 and 2. If the boilers are configured with parallel combustion controls and automatic flue gas oxygen trim the Department of Energy predicts that these control systems can be operated with flue gas oxygen levels of 1 ½% to 3%.
4. Install Blowdown heat recovery. Blowdown heat recovery can be as simple as passing the hot boiler water leaving the boiler through a heat exchanger to pre-heat the makeup water entering the boiler.
5. Steam Trap Maintenance Program. A formal program to tag and check steam traps one time per year are recommended.
6. Develop a plant survey of pipe insulation. Use the SSAT program to determine the savings where insulation is missing or in need of repair.
7. Add steam flow meters to the plant to record accurate data. This data can be used with the SSAT program to determine other areas of improvement opportunity.

- Note what you would expect would be Near Term, Medium Term, Long Term opportunities. See definitions below
 - ❑ Near term opportunities would include actions that could be taken as improvements in operating practices, maintenance of equipment or relatively low cost actions or equipment purchases.
 - ❑ Medium term opportunities would require purchase of additional equipment and/or changes in the system such as addition of recuperative air preheaters and use of energy to substitute current practices of steam use etc. It would be necessary to carryout further engineering and return on investment analysis.

- ❑ Long term opportunities would require testing of new technology and confirmation of performance of these technologies under the plant operating conditions with economic justification to meet the corporate investment criteria.

Management Support and Comments:

The plant provided full support to the ESA Team to capture any and every economically justifiable opportunity. The core team spent three days working with the ESA Specialist.